



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------------|-------------|----------------------|---------------------|------------------|
| 09/888,663 | 06/25/2001 | Michael H. Perrott | 026-0012 | 8862 |
| 22120 | 7590 | 01/14/2004 | EXAMINER | |
| ZAGORIN O'BRIEN & GRAHAM, L.L.P. | | | GLENN, KIMBERLY E | |
| 7600B N. CAPITAL OF TEXAS HWY. | | | ART UNIT | PAPER NUMBER |
| SUITE 350 | | | 2817 | |
| AUSTIN, TX 78731 | | | | |

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--|--------------------|
| Office Action Summary | Application No. 09/888,663 | Applicant(s) PERROTT, MICHAEL H. | |
| | Examiner Kimberly E Glenn | Art Unit 2817 | <i>[Signature]</i> |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 6, 7, 13, 15-20, 23, 25, 27, 31 and 33-39 is/are rejected.
- 7) ☒ Claim(s) 2, 5, 8-12, 14, 21, 22, 24, 26, 28-30 and 32 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>SEE below</u> | 6) <input type="checkbox"/> Other: _____ |

8/28/03, 9/12/03, 10/7/03, 11/3/03

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 25 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 recites the limitation "the first data path" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 27 recites the limitation "the second data path" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the

Art Unit: 2817

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1,3,4, 6, 7, 15-20, 23, 31, 35 and 36-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Peragine US Patent 6,623,185.

Peragine disclose figure 4, a circuit comprising a clock and data recovery(CDR)circuit 404, receiving an input signal from an optical receiver a logic circuit 408, a window detector 406. The CDR circuit includes a phase detector, a loop filter and a voltage-controlled oscillator (VCO) to recover the degraded signal. Three designs of CDR circuit are commercially available--a Surface Acoustic Wave (SAW) filter configuration; a Voltage-Controlled Crystal Oscillator (VCXO) configuration that includes a PLL; or an all silicon VCO configuration. Figure 3 discloses three sample windows 302, 304 and 306. In window 304, when a true data signal is present, then no transitions are detected during that sampling window. In contrast, during sampling windows 302 and 306, frequent data transitions are detected, indicating that during these sampling windows 302 and 306, an LOS event occurred. These data transitions can advantageously be counted, and if the number of transitions in a sampling window exceeds a pre-determined threshold number, an LOS indication is generated. By counting the transitions or lack of transitions, the CDR, which includes a phase locked loop, is evaluated. And based on this loss of signal output the oscillator would instantaneously be varied or changed. The method steps to the above disclosed apparatus are inherent. (See figures 3 and 4 and column 3; line 10 and column; 4 line 57)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peragine US Patent 6,623,185.

Peragine teaches figure 4, a circuit comprising a clock and data recovery(CDR)circuit 404, receiving an input signal from an optical receiver a logic circuit 408, a window detector 406. The CDR circuit includes a phase detector, a loop filter and a voltage-controlled oscillator (VCO) to recover the degraded signal. Three designs of CDR circuit are commercially available- a Surface Acoustic Wave (SAW) filter configuration; a Voltage-Controlled Crystal Oscillator (VCXO) configuration that includes a PLL; or an all silicon VCO configuration. Figure 3 discloses three sample windows 302, 304 and 306. In window 304, when a true data signal is present, then no transitions are detected during that sampling window. In contrast, during sampling windows 302 and 306, frequent data transitions are detected, indicating that during these sampling windows 302 and 306, an LOS event occurred.

Thus Peragine is shown to teach all the limitations of the claim with the exception of the oscillator circuit being a ring oscillator or a tank circuit having an inductive element.

One of ordinary skill in the art would have found to obvious to replace the oscillator of Peragine with a ring oscillator or tank circuit since examiner takes notice that each of theses are conventional voltage controlled oscillators and have been made use of in clock data recovery art

Art Unit: 2817

and the selection of any of these known conventional VCOs would be within the level of ordinary skill in the art.

Allowable Subject Matter

Claims 2, 5, 8-12, 14, 21, 22, 24, 26, 28, 29, 30 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With regards to claim 2, the prior art of record does not disclose or fairly teach further evaluating over a plurality of time periods, each of the time periods including an increasing number of evaluation intervals, whether the PLL is locked to the timing of the input data stream according to a number of evaluation intervals having one or more transitions in the predetermined portion of the sample clock period. With regards to claim 5, the prior art of record does not disclose or fairly teach the evaluation intervals being at least as long as the minimum period of the frequency offset. With regards to claims 8-12, 14 and 21, the prior art of record does not disclose or fairly teach output frequency being adjusted by changing or the variable impedance associated with the oscillator circuit until lock is achieved. With regards to claim 22, the prior art of record does not disclose or fairly teach the output of the variable oscillator comprising of varying at least one of the control voltages and a control current supplied to the variable oscillator. With regards to claims 24, 26 and 28, the prior art of record does not disclose or fairly teach the phase zone detect circuit includes a first data path and a second data path coupled to receive the input data stream, one of the first and second data paths being delayed with respect to the other,

Art Unit: 2817

thereby defining the phase zone, and wherein an output signal supplied from the first and second data paths are coupled to a logic circuit to be logically compared. With regards to claims 39 30 and 32, the prior art of record does not disclose or fairly teach a variable impedance circuit forming part of the variable oscillator circuit; and wherein the control circuit is responsive to the indication that lock is not achieved, to vary the variable impedance circuit to thereby adjust the output of the variable oscillator circuit.

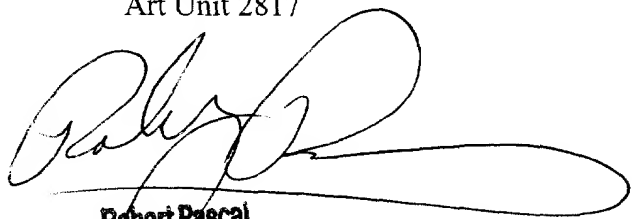
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly E Glenn whose telephone number is (703) 306-5942 ((571) 272-1761 after January 13, 2004). The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (703) 308-4909. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Kimberly E Glenn
Examiner
Art Unit 2817

keg



Robert Pascal
Supervisory Patent Examiner
Technology Center 2800